

REMARKS

As an initial matter, Applicants would like to thank Examiner Golightly and Supervisor Kornakov for interviewing this application with Applicants' undersigned counsel on January 20, 2010. Applicants' undersigned counsel discussed the present invention and the differences with respect to the cited prior art. The following amendments are based upon the communication during the Interview.

The Office Action mailed November 6, 2009 has been carefully reviewed. From the Summary page, claims 1-33 were seen pending. Claims 11-33 are withdrawn from consideration. Claims 1-10 are rejected. The Drawings filed April 28, 2006 have been accepted. Acknowledgment has been made of Applicants' Claim for Priority. The Information Disclosure Statements filed April 28, 2006 and June 8, 2007 have been considered.

By this response, claims 1 and 4 have been amended and claim 10 has been canceled. No statutory new matter has been added. Support for all amendments can be found in the original disclosure.

35 U.S.C. § 112, second paragraph – Claim Rejection

An indefinite rejection was made to claim 4 regarding the work “rapidly”. Applicants have deleted this term from claim 4. Therefore, reconsideration and withdrawal of the rejection are solicited by Applicants.

35 U.S.C. § 103(a) – Claim Rejection

Claims 1-10 stand rejected as being unpatentable over Mertens et al. (US 2002/0130106). The rejection as to claim 10 is moot upon cancellation. The rejection as to claims 1-9 is respectfully traversed.

Amended claim 1 is defined as,

*“A substrate cleaning method for cleaning target substrates comprising:
holding a target substrate having both hydrophobic and hydrophilic areas in a
substantially horizontal state;*

performing a rinse process on the target substrate by supplying only pure water onto a surface of the substrate from a pure-water feed point at a center of the surface while rotating the target substrate; and
continuous with the rinse process step, reducing a feed amount of the pure water supplied to the target substrate from the pure-water feed point at the surface center so that the supply is smaller than the supply of pure water used in the rinse process at the center without stopping the supply of pure water; and
continuous with the reducing of the feed amount step, performing a spin dry process on the target substrate by moving the pure-water feed point outward from the surface center while supplying the pure water at a reduced feed amount to form a liquid film outside of the center surface feed point."

Applicants submit that Mertens does not recognize supplying only pure water to the substrate in a drying step¹. That is, Mertens supplies water, ozone and an additive acting as a scavenger for removing organic contaminants from the wafer surface "prior" to the liquid removal step. See para. [0018].

To the contrary, Applicants' method supplies only pure water to a particular kind of substrate during a continuous rotation thereof. Namely, the surface of the substrate includes areas which are both hydrophobic and hydrophilic. To accommodate for different drying times due to the hydrophobic and hydrophilic areas of the substrate, a thin liquid film of only pure water is formed thereon so as to prevent rebounding of pure water onto dried surfaces of the substrate. The water is fed continuously, but at different feed rates and at different parts of the rotating substrate according to Applicants' particular method steps. This prevents formation of water marks. Because Mertens fails to recognize supplying only pure water to the substrate to process both hydrophobic and hydrophilic surfaces, the *prima facie* case of obviousness simply must fail. Thus, amended claim 1 patentably distinguishes thereover. Reconsideration and withdrawal of the rejection as to claim 1 and claims 2-9, dependent thereon are courteously requested by Applicants.

¹ The Examiner admits that Mertens et al. does not teach pure water and making a feed amount of water to the substrate smaller than that at a time of the rinse process. An obviousness argument was asserted that using pure water is well-known in the art. Also, the Examiner asserted that it would have been obvious to try making the feed amount smaller since only three possibilities are available – making the feed amount smaller, keeping it the same and making the feed amount larger.

Double Patenting Rejection

Claims 1-10 are provisionally rejected on the grounds of non-statutory obviousness-type double patenting as being unpatentable over claims 13, 14 and 17 of co-pending Application No. 11/976, 188 to Nanba et al. (US 2008/0173333) in view of Mertens (US 2002/0130106). The rejection as to claim 10 is moot upon cancellation. The rejection as to claims 1-9 is respectfully traversed.

In view of the amendments to claim 1 presented above, Applicants submit that the double patenting rejection in view of Nanba and Mertens must fail. In addition, as discussed during the Interview, action regarding the double patenting rejection will be stayed until the end of prosecution. As such, reconsideration and withdrawal of the rejection as to claim 1 and claims 2-9, dependent thereon, are kindly requested by Applicants.

CONCLUSION

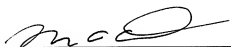
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Therefore, it is respectfully requested that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

If any fees under 37 C. F. R. §§ 1.16 or 1.17 are due in connection with this filing, please charge the fees to **Deposit Account No. 02-4300, Attorney Docket No. 033082 M 312**.

Respectfully submitted,
SMITH, GAMBRELL & RUSSELL, LLP

By:


Michael A. Makuch, Reg. No. 32,263
1130 Connecticut Ave., N.W., Suite 1130
Washington, D.C. 20036
Telephone: (202) 263-4300
Facsimile: (202) 263-4329

Dated: February 5, 2010

SGRDC\364367.3